

CLAIMS

What is claimed is:

1. An electricity meter for monitoring electric power consumed from a service line, the electricity meter comprising:
 - 5 a power consumption metering system for measuring the amount of power consumed from the service line, the metering system including a controller for acquiring and data storage for storing power consumption data;
 - a peripheral device providing a non-critical function;
 - a power converter providing an unregulated voltage output at the terminals
 - 10 of a capacitor for powering the metering system;
 - a load management system selectively coupling and decoupling the peripheral device from the power converter, said load management system sensing the unregulated voltage to determine whether to couple or decouple the peripheral device.
2. The meter of claim 1 wherein the coupling and decoupling
- 15 performed by the load management system is controlled by a load control signal the value of which is dictated by the voltage across the capacitor.
3. The meter of claim 2 wherein the load management system includes an electrically controlled switch responsive to the load control signal for performing the coupling and decoupling.
- 20 4. The meter of claim 3 wherein the load control signal is generated by the controller.

5. The meter of claim 4 wherein the controller is resident on a first printed circuit board including the power converter and the peripheral device is present on a second printed circuit board coupled to the first printed circuit board.

6. The meter of claim 5 wherein the switch is resident on the first
5 printed circuit board.

7. The meter of claim 5 wherein the metering system is resident on the first printed circuit board.

8. The meter of claim 1 and further comprising a plurality of peripheral devices and wherein the load management system couples and decouples the
10 plurality of peripheral devices simultaneously.

9. The meter of claim 8 wherein the controller and power converter are resident on a first printed circuit board and each peripheral device is present on a printed circuit board distinct from but coupled to the first printed circuit board.

10. The meter of claim 9 wherein the load management system further
15 comprises a switch resident on the first printed circuit board.

11. The meter of claim 10 wherein the metering system is resident on the first printed circuit board.

12. A load management system for an electrical meter monitoring power usage from a service line, the meter having a power supply, a peripheral device
20 and a data acquisition and storage circuit having a controller, the power supply being coupled to the service line and including a storage capacitor having an unregulated voltage present across its terminals, said power supply powering the data acquisition and storage circuit, the load management system comprising:

a signal generator generating a control signal having a level dependent upon the voltage across the terminals of the capacitor;

an electrically controlled switch having an ON state and an OFF state, the state of said switch being dependent upon the level of the control signal;

5 a conductive branch coupled to the peripheral device and including the electrically controlled switch, and

wherein when the switch is in its ON state the peripheral device is electrically coupled to and powered by the power supply and when the switch is in its OFF state the peripheral device is electrically decoupled from the power supply.

10 13. The load management system of claim 12 wherein the switch is a transistor.

14 The load management system of claim 13 wherein the signal generator is implemented in part by the controller of the data acquisition and storage circuit.

15 15 The load management system of claim 14 wherein the data acquisition and storage circuit is resident on a first board and the peripheral device is resident on a second board coupled to the first board.

16. The load management system of claim wherein the switch is resident on the first board.

20 17. A method of managing the load on a power supply in an electricity meter having a power supply converting service line power to regulated dc power using circuitry including a storage capacitor having an unregulated voltage across its terminals, metering circuits coupled to the power supply output and utilizing a controller to acquire

data and memory to store data and a plurality of peripheral circuits each configured to be selectively coupled to the power supply output when mounted within the meter, the method comprising the steps of:

sensing the presence of the unregulated voltage;

5 selecting one of the plurality of peripheral devices and mounting the selected peripheral device in the meter;

comparing using the controller the sensed unregulated voltage to a threshold value;

deciding using the controller whether to couple the selected peripheral
10 device to, or decouple the selected peripheral device from, the power supply based on the outcome of the comparing step;

coupling the selected peripheral device to, or decoupling the selected peripheral device from, the power supply based on the outcome of the deciding step; and

repeating the comparing, deciding and coupling or decoupling steps.

15 18. The method of claim 17 and further comprising the step of selecting a second of the plurality of peripheral devices and mounting the second selected peripheral device in the meter wherein the first and second peripheral device are coupled or decoupled from the power supply based on the outcome of the deciding step.

19. The method of claim 17 and further comprising the step of providing
20 a switch responsive to the outcome of the deciding step that is mounted in the meter separately from any selected peripheral device, said switch being coupled to the power supply and coupled to the selected peripheral device upon mounting of the selected peripheral device.